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10/802,285	03/16/2004	Vijayalakshmi R. Raveendran	030065	3631

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QUALCOMM INCORPORATED  
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EXAMINER
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RASHID, DAVID

ART UNIT	PAPER NUMBER
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2609

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/27/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	Application No. 10/802,285	Applicant(s) RAVEENDRAN ET AL.	
	Examiner David P. Rashid	Art Unit 2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13-17 and 22-33 is/are rejected.
- 7) ☒ Claim(s) 9-12 and 18-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/11/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

All of the examiner's suggestions presented herein below have been assumed for examination purposes, unless otherwise noted.

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - (i) Paragraph [0028], line 3 contains a grammatical error – suggest changing to “...practiced without these specific details.”
  - (ii) Paragraph [0042], line 4 contains two grammatical errors – suggest changing “Thus declocking filter module 240 may comprises one or more...” to “Thus deblocking filter module 240 may comprise one or more...”
  - (iii) Paragraph [0043], line 4 is unclear as to what is being disclosed at “In one embodiment ass, as shown in...” – suggest changing to “In one embodiment as shown in...”
  - (iv) Paragraph [0049], lines 12 – 16 contain lines that are improperly tabbed – suggest removing them.
  - (v) Paragraph [0051], line 2 states “If both PQR bits are lengths greater than 5 bits (1415), the process ends.” which is unclear because a “PQR bit” cannot be of a length greater than 5 bits because a “PQR bit” is exactly one bit – suggest changing to “If both PQR bit lengths are lengths greater than 5 bits (1415), the process ends.”

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(vi) The same argument of (v) is applied to both Paragraph [0051], line 5 and 6 – suggest changing both as in the suggestion of (v)

Appropriate correction is required.

### *Claim Suggestions*

2. (i) Claim 1, line 1 is suggested to change to “The method for...” for grammatical consistency.
- (ii) Claim 1, line 5 is suggested to add the word “and” after the semi-colon for grammatical consistency.

### *Claim Rejections - 35 USC § 101*

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject

Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

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In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

4. **Claims 22, 23, 24, 25, 26, 27, 28, 29 and 30** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 22, 23, 24, 25, 26, 27, 28, 29 and 30 define “an article of manufacture” embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., “When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized” – Guidelines Annex IV). That is, the scope of the presently claimed “article of manufacture” can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on “computer-readable medium” or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 22, 23, 24, 25, 26, 27, 28, 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by the Intel 80286 16-bit microprocessor.

Regarding 22, 23, 24, 25, 26, 27, 28, 29 and 30, the Intel 80286 16-bit microprocessor discloses an article of manufacture for use in a computer system embodying a block based image compressing system (intended usage), said article of manufacture comprising machine readable medium having machine readable code means embodied in said medium comprising: machine readable code means embodied in said machine readable.

It must be noted that all elements of claims 22 through 30 after the word "for" are strictly interpreted as intended usage of the machine readable code means embodied in said machine readable medium, meaning they may or may not occur. Please refer to the suggestion in the 35 USC 101 claim rejection section.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, 2, 3, 4, 5, 6, 7, 8, 13, 14, 15, 16, 17, 22, 23, 24, 25, 26, 31, 32 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination between Thyagarajan (US 2004/0096111 A1) and Lee et al. (US 6539060 B1).

Regarding **claim 1**, while Thyagarajan discloses a method for processing images compressed using block based compression (“Thus, embodiments of the invention describe an apparatus and method for determining a block size assignment for a block of data representing pixels.”, paragraph [0015]), comprising:

determining whether two blocks are neighboring blocks (As shown in FIG. 2A, evaluation of block 410 requires the size and calculations of its surrounding neighborhood as disclosed “FIG. 2a illustrates an N.times.N block of pixels 400. Consider evaluation of block 410. The neighborhood size is then (2p+1).times.(2p+1) blocks. Thus, determination of the local contrast ratio for block 410 (r,c) considers the contrast in its neighboring blocks, blocks 402, 404, 406, 408, 412, 414, 416, and 418. If the block being evaluated is a corner block, such as block 402, then its neighbors comprise blocks 404, 410, and 408. For a block on the edge but not a corner, such as block 412, its neighbors comprise blocks 406, 404, 410, 416, and 418.”, paragraph [0033].);

determining whether the two neighboring blocks are both subdivided, if it is determined that the two blocks are neighboring blocks (FIG. 2B discloses the process to determine the local contrast ratio which includes comparing to a variance threshold to determine the sub-blocks (which is essence is whether the block is subdivided). “Once the local contrast ratio is

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determined, the variance threshold corresponding to the contrast ratio is determined 468. Thus, if the local contrast ratio falls within a given range, a particular variance threshold is assigned.

Upon determining the variance threshold corresponding to a given contrast ratio, the block size assignment is determined 472.”, paragraph [0041]. This variance calculation to determine sub-blocks (block being subdivided) is performed on blocks with neighborhood blocks as disclosed in FIG. 2A.), Thyagarajan does not teach performing deblocking filtering on one or more edge pixels of the two neighboring blocks, if it is determined that both of the two neighboring blocks are not subdivided.

Lee et al. teaches a image data post-processing method (“...there is provided an image data post-processing method for reducing quantization effect induced when image data compressed based on a block is decoded...”, column 2, line 31) that discloses performing deblocking filtering on one or more edge pixels of the two neighboring blocks (FIG. 5 shows a clear example of two neighboring blocks from which edge pixels from each of the two neighboring blocks undergo deblocking filtering as disclosed.), if it is determined that both of the two neighboring blocks are not subdivided (This condition is inherent as disclosed because the blocks in question in Lee et al. are not subdivided.).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to disclose performing deblocking filtering on one or more edge pixels of the two neighboring blocks, if it is determined that both of the two neighboring blocks are not subdivided as taught by Lee et al. “...for reducing quantization effect induced when image data compress based on a block is decoded...”, column 2, line 32.



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Regarding **claim 2**, Thyagarajan discloses determining whether two neighboring blocks are both subdivided comprises:

obtaining variance values of each of the two neighboring blocks (FIG. 2A discloses the variance value calculation for block 410 as shown in FIG. 2B; however, it is inherent that each block in the image undergoes the same variance value calculation (using its neighborhood blocks) including neighboring blocks.);

comparing the variance values to a first threshold (refer to references cited in claim 1) ;  
and

determining whether the two neighboring blocks are both subdivided based upon the comparison of the variance values to the first threshold (refer to references cited in claim 1).

Regarding **claim 3**, Thyagarajan discloses determining whether two neighboring blocks are both subdivided comprises:

obtaining a block size assignment value (“Upon determining the variance threshold corresponding to a given contrast ratio, the block size assignment is determined 472.”, paragraph [0041].; and

using the block size assignment value to determine whether the two neighboring values are subdivided (“Additionally, the PQR data generated by this block size assignment is shown in FIG. 3c.”, paragraph [0041] where it is inherent that PQR data generated by block size assignment can determine subdivision of each block).

Regarding **claim 4**, while Thyagarajan discloses further comprising:

determining whether one of the two neighboring blocks is subdivided, if both of the two neighboring blocks are not subdivided (refer to references cited in claim 1), Thyagarajan does not teach using a first deblocking filter on one or more edge pixels of the two neighboring blocks if one of the two neighboring blocks is subdivided; and using a second deblocking filter on one or more edge pixels of the two neighboring blocks if neither of the two neighboring blocks are subdivided.

Lee et al. discloses an image data post-processing method (“...there is provided an image data post-processing method for reducing quantization effect induced when image data compressed based on a block is decoded...”, column 2, line 31) that teaches using a first deblocking filter on one or more edge pixels of the two neighboring blocks if one of the two neighboring blocks is subdivided (Whether or not one of the two neighboring blocks is subdivided as determined by Thyagarajan, Lee et al. discloses a horizontal deblocking filter (first deblocking filter). Hence if one of the two neighboring blocks is subdivided, a first deblocking filter will consequently be used.); and

using a second deblocking filter on one or more edge pixels of the two neighboring blocks if neither of the two neighboring blocks are subdivided (“7-tab filtering: //change A, B, C, D, E and F//”, column 9, line 31 where Lee et al. teaches changing the horizontal boundary pixel range vertically, thus producing a second deblocking filter. It must be noted that there must exist two or more deblocking filters since the equation (column 9, lines 30 – 35) changes boundary pixels no matter if “HBS of BLOCK-I = 1 and HBS of BLOCK-J = 1” occurs or not.) Whether or not the two neighboring blocks are subdivided as determined by Thyagarajan, Lee et al. discloses an additional horizontal deblocking filter (second deblocking filter) between the two

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neighboring blocks. Hence if both neighboring blocks are not subdivided, a second deblocking filter will consequently be used.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to disclose using a first deblocking filter on one or more edge pixels of the two neighboring blocks if one of the two neighboring blocks is subdivided; and using a second deblocking filter on one or more edge pixels of the two neighboring blocks if neither of the two neighboring blocks are subdivided as taught by Lee et al. "...for reducing quantization effect induced when image data compress based on a block is decoded...", Lee et al., column 2, line 32.

Regarding **claim 5**, while the combination between Lee et al. and Thyagarajan disclose the method of claim 4, the combination does not teach using the second deblocking filter comprises: using a two point averaging filter on two edge pixels of the two neighboring blocks.

Lee et al. discloses an image data post-processing method ("...there is provided an image data post-processing method for reducing quantization effect induced when image data compressed based on a block is decoded...", column 2, line 31) that teaches wherein using the second deblocking filter comprises:

using a two point averaging filter on two edge pixels of the two neighboring blocks (" FIG. 6A shows an example of a 1-dimensional view of the blocking artifacts, FIG. 6B shows the result after the 7-tap filtering is performed, and FIG. 6C shows the result after weak filtering is performed. The weak filtering is performed when the difference in the block boundary,

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$d = \text{vertline.D} - \text{C.vertline.}$ , is smaller than QP.”, column 9, line 53. The boundary pixels in FIG. 6A undergo a two point (C,D) averaging filter, the result being FIG. 6C as shown by

$$d = \text{abs}(D - C) / 2$$

for the shifting of boundary pixels C and D.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to disclose wherein using the second deblocking filter comprises: using a two point averaging filter on two edge pixels of the two neighboring blocks as taught by Lee et al. “In order to reduce the blocking artifacts...”, Lee et al., column 9, line 17.

Regarding **claim 6**, while the combination between Lee et al. and Thyagarajan disclose the method of claim 4, the combination does not disclose obtaining one or more difference values of one or more edge pixels of the two neighboring blocks, if neither of the two neighboring blocks are subdivided; comparing the one or more difference values to a second threshold; and selecting the second deblocking filter based on the comparison of the one or more difference values to the second threshold.

Lee et al. discloses an image data post-processing method (“...there is provided an image data post-processing method for reducing quantization effect induced when image data compressed based on a block is decoded...”, column 2, line 31) that teaches

obtaining one or more difference values of one or more edge pixels of the two neighboring blocks, if neither of the two neighboring blocks are subdivided (If the horizontal boundary pixels A, B, C, D, E and F are vertically changing between the two neighborhood pixels to create multiple deblocking filters (FIG. 5), then it is inherent that one or more

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difference values of one or more edge pixels are being obtained by FIG. 6A. It must also be noted that the blocks as disclosed in Lee et al. are not sub-divided, and hence the algorithm is carried out.);

comparing the one or more difference values to a second threshold (The second threshold is the “if statement”, column 9, line 34. “if (abs(D-C)<QP” shows that the one or more difference values are being compared to a second threshold QP.); and

selecting the second deblocking filter based on the comparison of the one or more difference values to the second threshold (The “selection” of the second deblocking filter is automatic from the equation (column 9, lines 30 – 35) since the equation moves the horizontal boundary pixels vertically between the two neighboring pixels and consequently the comparison of the one or more difference values to the QP have occurred. Depending on the input boundary pixels as compared to the threshold QP, the weak filtering may result.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to disclose obtaining one or more difference values of one or more edge pixels of the two neighboring blocks, if neither of the two neighboring blocks are subdivided; comparing the one or more difference values to a second threshold; and selecting the second deblocking filter based on the comparison of the one or more difference values to the second threshold as taught by Lee et al. “In order to reduce the blocking artifacts...”, Lee et al., column 9, line 17.

Regarding **claim 7**, while the combination between Lee et al. and Thyagarajan disclose the method of claim 6, the combination does not teach wherein the obtaining one or more

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difference values comprises: obtaining a first order difference between edge pixels of the two neighboring blocks.

Lee et al. discloses an image data post-processing method (“...there is provided an image data post-processing method for reducing quantization effect induced when image data compressed based on a block is decoded...”, column 2, line 31) that teaches wherein the obtaining one or more difference values comprises: obtaining a first order difference between edge pixels of the two neighboring blocks (Refer to claim 5 in reference to the first order difference filter (called “weak filtering”) used on the boundary pixels. It is well known to one of ordinary skill in the art that a first order difference equation is of the form

$$X_t = J * X_{t-1} + K_t$$

Let the first order difference equation now be of the form:

$$A' = A + 0$$

$$B' = A' + (d/8)$$

$$C' = B' + (d/2 - d/8)$$

This first order difference equation is disclosed using the “weak filter” of Lee et al.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to disclose obtaining a first order difference between edge pixels of the two neighboring blocks as taught by Lee et al. “In order to reduce the blocking artifacts...”, Lee et al., column 9, line 17.

Regarding **claim 8**, while the combination between Lee et al. and Thyagarajan disclose the method of claim 6, the combination does not teach wherein obtaining one or more difference

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values comprises: obtaining a second order difference between edge pixels of the two neighboring blocks.

Lee et al. discloses an image data post-processing method (“...there is provided an image data post-processing method for reducing quantization effect induced when image data compressed based on a block is decoded...”, column 2, line 31) that teaches obtaining one or more difference values comprises:

obtaining a second order difference between edge pixels of the two neighboring blocks (Similar to the references cited in claim 5, Lee et al. discloses a “weak filter” in changing FIG. 6A to FIG. 6C. . It is well known to one of ordinary skill in the art that a second order difference equation is of the form

$$X_t = J * X_{t-2} + K * X_{t-1} + L_t$$

Let the second order difference equation now be of the form:

$$C' = A' + B' + (-B' + d/2) \text{ where } J = 1, K = 1, L = (-B' + d/2)$$

This second order difference equation is disclosed using the “weak filter” of Lee et al.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to disclose obtaining a first order difference between edge pixels of the two neighboring blocks as taught by Lee et al. “In order to reduce the blocking artifacts...”, Lee et al., column 9, line 17.

Regarding **claims 13, 14, 15, 16 and 17**, the apparatus is anticipated by Thyagarauan and Lee et al. for the reasons given for claims 1, 2, 3, 4, 5, 6, 7, and 8 in combination. All means

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plus function elements of claims 13, 14, 15, 16, and 17 are carried out by interaction between software/hardware and a computer as disclosed in by Thyagarauan:

“Those of skill would further appreciate that the various illustrative logical blocks, modules, circuits, and algorithm steps described in connection with the embodiments disclosed herein may be implemented as electronic hardware, computer software, or combinations of both. To clearly illustrate this interchangeability of hardware and software, various illustrative components, blocks, modules, circuits, and steps have been described above generally in terms of their functionality.”, Thyagarauan, paragraph [0062]

and Lee et al.:

“Also, the present invention may be embodied as a program capable of being run by a computer, and may be embodied in a general purpose digital computer that is running the program from a computer usable medium including but not limited to storage media such as magnetic storage media (e.g., ROM's, floppy disks, hard disks, etc.), optically readable media (e.g., CD-ROMs, DVDs, etc.) and carrier waves (e.g., transmissions over the Internet).”, Lee et al, column 5, line 56.

Regarding **claims 22, 23, 24, 25 and 26**, the apparatus is anticipated by Thyagarauan and Lee et al. for the reasons given for claims 1, 2, 3, 4, 5, 6, 7, and 8 in combination. All of claims 22, 23, 24, 25 and 26 are carried out by interaction between software/hardware and a computer as disclosed in by Thyagarauan and Lee et al. (refer to references cited in claims 13, 14, 15, 16, and 17).



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Regarding **claim 31** and **32**, the apparatus is anticipated by Thyagarauan and Lee et al. for the reasons given for claim 1 and references cited in claims 13 through 17 in combination.

Regarding **claim 33**, the apparatus is anticipated by Thyagarauan and Lee et al. for the reasons given for claim 2 and references cited in claims 13 through 17 in combination.

### ***Double Patenting***

8. Claim 1 (of which will be referred to as Reveendran'392) is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 11/120,403 (of which will be referred to as Reveendran'505).

Although the conflicting claims are not identical, they are not patentably distinct from each other as follows:

Regarding **claim 1** of Reveendran'392, Reveendran'505 discloses a method for processing images compressed using block based compression ("A method for deblocking and edge enhancement of block based digital video...", Reveendran'505, claim 1, line 1), comprising:

determining whether two blocks are neighboring blocks ("...determining that two blocks share a common boundary..." Reveendran'505, claim 1, line 3);

determining whether the two neighboring blocks are both subdivided, if it is determined that the two blocks are neighboring blocks ("FIG. 2 is an illustration of pixels adjacent to vertical and horizontal 4.times.4 block boundaries;" , paragraph [0010]. It is inherent that every block as

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disclosed by Reveendran'505 contains at least one pixel – hence it is automatically determined that the two neighboring blocks are both subdivided by respective pixels.);

performing deblocking filtering on one or more edge pixels of the two neighboring blocks, if it is determined that both of the two neighboring blocks are not subdivided (Since it is inherent that every block as disclosed by Reveendran'505 contains at least one pixel, deblocking filtering is not performed on one or more edge pixels – which is the case “...enhancing one or more pixels of the two neighboring blocks if the edge activity is at or above the first threshold.”, Reveendran'505, claim 1, line 9. If the neighboring blocks is at or above a threshold, the blocks are “enhanced” which does not necessarily suggest “deblock filtering” It is this full “enhancing” case that reads on claim 1 of Reveendran'392.).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Allowable Subject Matter***

9. **Claims 9, 10, 11, 12, 18, 19, 20 and 21** would be allowable if rewritten to overcome the objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. **Claims 27, 28, 29, and 30** would be allowable if rewritten to overcome the objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims, as well as the rejection under 35 U.S.C. 101 as described above.

10. The following is a statement of reasons for the indication of allowable subject matter:

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Regarding claims 9, 10, 11, 12, 18, 19, 20, 21, 27, 28, 29, and 30, the prior art teaches a method for processing images compressed using block based compression, comprising neighborhood block comparisons involving deblock filtering using thresholds. The prior art also teaches obtaining decompression/decoding block size assignment values through the variance calculations.

However, the prior art does not teach further specifics on using a Gaussian filter if at least two of the difference values (between the edge pixels of two neighborhood blocks) are greater than a second threshold when obtaining one or more difference values as disclosed in the examined application.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Rashid whose telephone number is (571) 270-1578. The examiner can normally be reached on 7:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DPR

David P Rashid  
Examiner  
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